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GB 1234848 A EP 0267797 A2 US 4788628 A

(58) Field of search

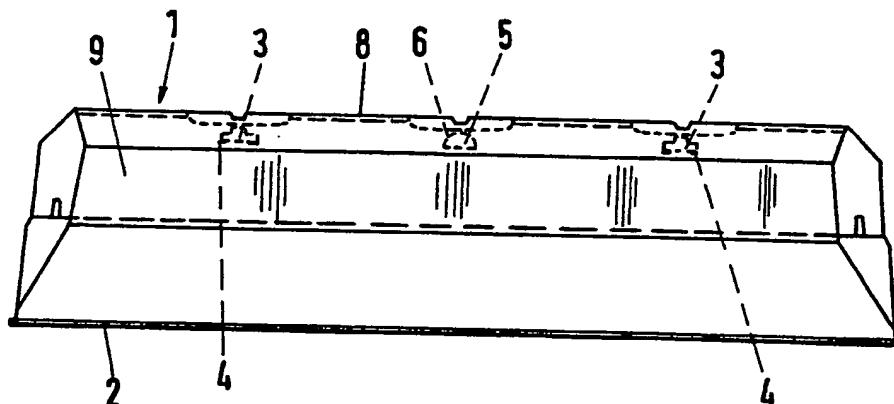
UK CL (Edition K) G2X XB25 X1K1 X1K12

INT CL⁵ G03B

(54) Lighting for photographic exposures

(57) The light housing (9) has a main reflector (1) with a diffuser (2), which is struck by light rays from light sources (3) located in the light housing (9). A part of the diffuser (2) is illuminated by at least one additional light source (5), whereof the light rays, in addition to the light rays from at least one of the other light sources (3), reach the diffuser (2). Due to the additional light source (5), the diffuser (2) has a region of increased light concentration. When taking a photograph, the light is arranged so that the object to be photographed which has a dull surface lies in the region of this increased light concentration. Considerable false flashes are produced on surfaces having a dull finish, which stand out clearly against the background. Source (5) preferably has its own reflector (6) which can be focussed or exchanged; source (5) is generally separately controlled from sources (3).

Fig.3



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Fig.1

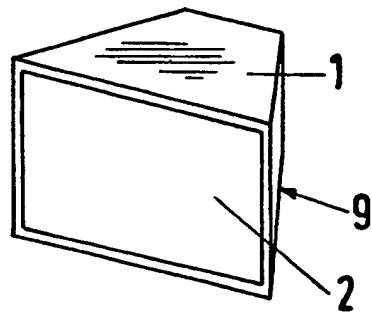


Fig.2

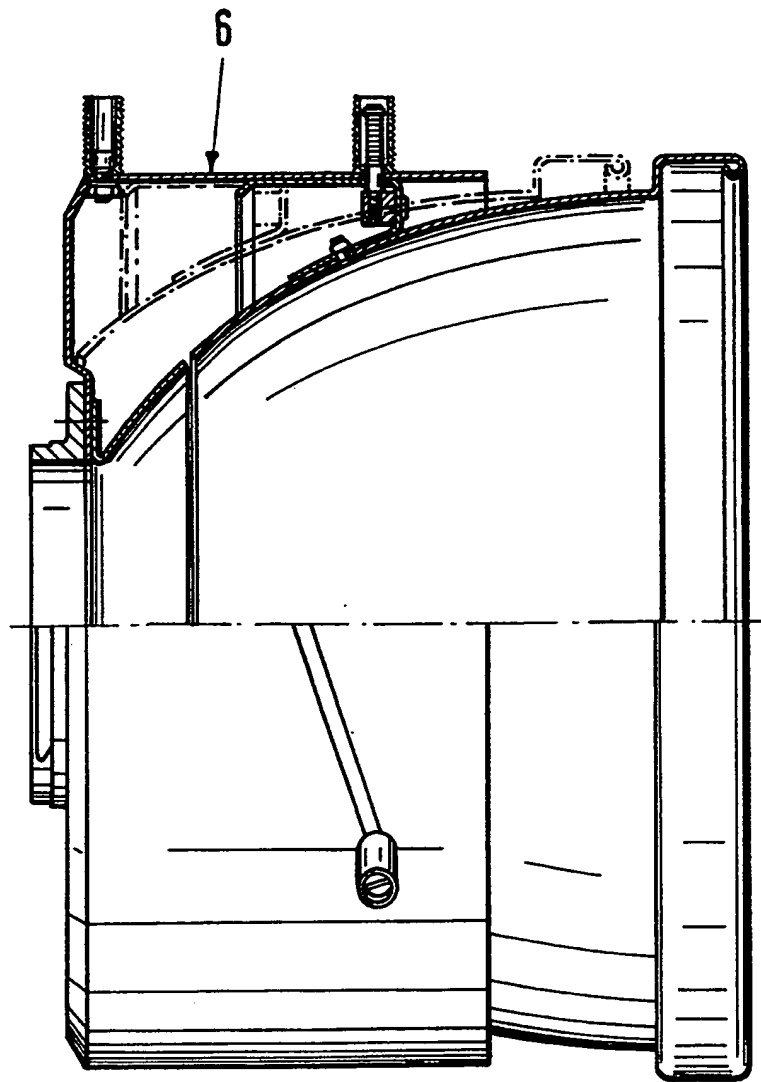


Fig.3

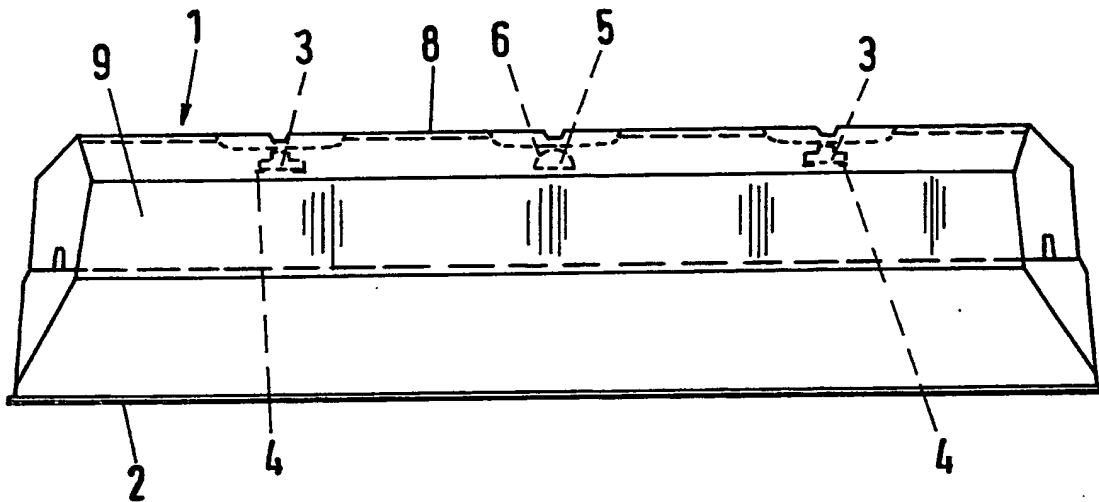
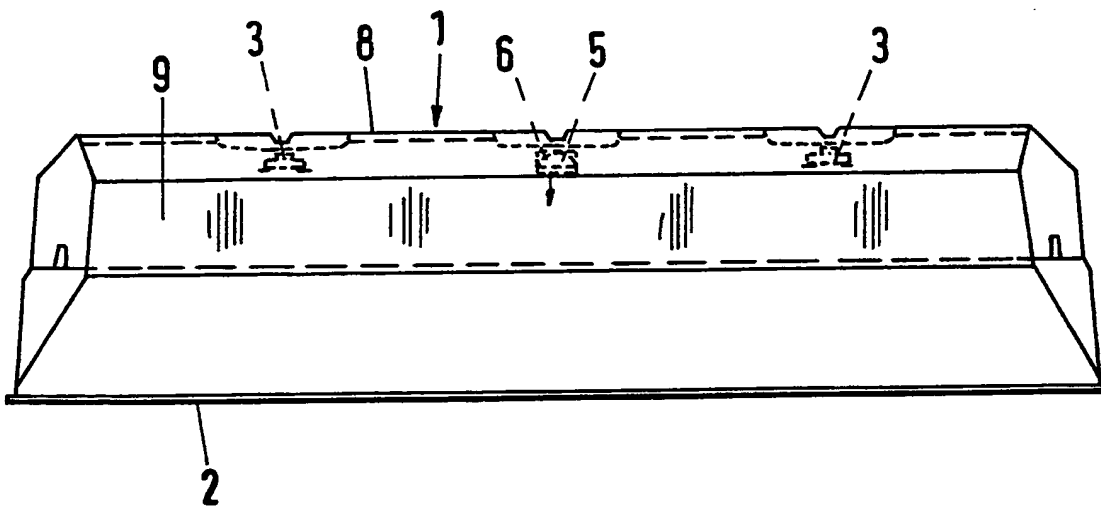


Fig.4



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LIGHT FOR PHOTOGRAPHIC EXPOSURES

The invention relates to a light for photographic exposures according to the preamble of Claim 1.

Lights of this type are constructed so that their light outlet opening is illuminated completely uniformly, so that a false flash in a shiny part of the object to be photographed likewise lights up uniformly. Surface lights of this type are particularly suitable for photographing extremely shiny parts, for example parts of bodywork, instruments, bottles, glasses and the like. However, if such lights are used for photographing objects having a dull surface, for example for photographing fruit and the like, then according to the surface, the false flash produced on these objects is too flat, i.e. its intensity stands out inadequately against the background.

It is the object of the invention to construct the light of the aforementioned general type so that objects having a dull surface can be photographed there-with so that the false flashes produced on this object stand out clearly against the background.

This object is achieved according to the invention in the light of the aforementioned general type with the characterising features of Claim 1.

In the light according to the invention, the light outlet opening or the diffuser is no longer uniformly illuminated; due to the additional light source, the diffuser has a region of increased light concentration.

5 When taking the photograph, the light is arranged so that the object to be photographed and which has a dull surface lies in the region of this increased light concentration. Due to this, when taking the photograph, intense false flashes are produced even on surfaces

10 having a dull finish, which stand out clearly against the background. In this way, optimum photographs can be taken of such objects.

A reflector is advantageously associated with the additional light source, so that a high intensity

15 is achieved in the region of the increased light concentration.

In order to be able to vary the extent of the light concentration in diameter and/or in intensity, the reflector is able to be focussed and/or exchanged.

20 It is consequently possible to adapt the light to different photographic conditions.

In this case, the reflector may be located inside or outside the main reflector. If the reflector of the additional light source is located outside the

25 main reflector, it can be exchanged without difficulties.

In order that the light can be used both for a uniform as well as for a non-uniform illumination, the additional light source as well as the other light sources can be operated separately from each other.

30 If a completely uniform illumination of the light outlet opening is to be achieved with the surface light, then solely the normal light sources, but not the additional

light source is switched on. In this case, the light is suitable for taking photographs of shiny parts. However, if objects having a dull surface are to be illuminated with this light, the additional light source
5 is likewise switched on, so that then the region of increased light concentration is produced.

In order to obtain an optimum light output, the reflector is preferably located on the side of the additional light source remote from the diffuser.

10 It is appropriate to locate the additional light source centrally on the wall of the light opposite the diffuser.

Further features of the invention will become apparent from the other Claims, Description and drawings.

15 The invention will be described in detail with reference to two embodiments illustrated diagrammatically in the drawings, in which:

Figure 1 shows a surface light according to the invention for photographic exposures, diagrammatically and in
20 perspective view,

Figure 2 shows a section through a reflector which can be focussed and exchanged and is located in the surface light according to Figure 1, to an enlarged scale,

25 Figure 3 is a plan view of the surface light according to the invention,

Figure 4 shows a second embodiment of a surface light according to the invention, in an illustration corresponding to Figure 3.

The surface light has a main reflector 1, which is constructed in known manner. The surface light is provided with a light outlet opening 7, which is closed by a diffuser 2. Disposed on the rear wall 5 8 of the reflector housing 9, lying opposite the diffuser 2, are light sources 3 within the main reflector 1, with which a uniform light density can be achieved at the diffuser 2. These light sources 3 are accordingly distributed so that this uniform light density is achieved 10 in a troublefree manner. Counter-reflectors 4 (Figure 3) may possibly be associated with the light sources 3, such as are known for example from US-PS 4 760 498 and which are located between the respective light source 3 and the diffuser 2. They can also be used 15 for achieving a uniform light density at the diffuser 2.

The light outlet opening 7 can be illuminated completely uniformly with the light sources and the counter-reflectors 4 possibly preceding them. This 20 is necessary if a false flash in a shiny part of an object to be photographed is to provide uniform illumination. This is provided in particular for taking photographs of highly shiny parts, for example parts of bodywork, instruments, bottles, glasses and the like. 25 However, if objects having a dull surface, for example fruit and the like, are photographed, then depending on the surface of this object, the false flashes produced on these objects are too weak, i.e. the false flashes on these objects do not stand out or only slightly 30 in their intensity against the background. Now, however, these false flashes should stand out in the case of objects having a dull surface. Thus, a light source with an outlet surface illuminating completely uniformly is not suitable for photographs of this type.

For this reason, in the surface light, a measure is provided in order to produce a very intensive false flash even on objects having a dull surface, which stands out clearly from the background. Located within the surface light is an additional light source 5 (Figures 3 and 4), whereof the light rays fall onto the diffuser 2. Due to this additional light source 5, the diffuser 2 is illuminated more intensively in the region of the rays. Advantageously, the additional light source 5 is provided centrally on the rear side 8 of the surface light, so that the light concentration occurs in the centre of the diffuser 2. The additional light source 5 can thus be switched on if objects having a dull surface are to be photographed. In this case, an intensity increasing in the direction of the region of rays of this light source 5 occurs at the diffuser 2. If the light source 5 is located centrally on the rear wall 8, then the increased light concentration occurs at the centre of the diffuser 2, so that an increasing light intensity occurs in the direction of this diffuser centre. The extent of the light concentration in the centre of the diffuser 2 depends on the nature of the surface to be photographed. Therefore, it is appropriate if the region of the increased light concentration can be varied in diameter and/or in intensity.

In order to achieve a high light concentration on the diffuser 2, the additional light source 5 is partly surrounded by a reflector 6 (Figure 3), which in the embodiment is located within the surface light. A so-called hot spot can be produced with this reflector, thus a region with an increased light concentration on the diffuser 2. Depending on the opening angle of this reflector, the region of increased light concentration can thus be varied in diameter and also in intensity. This reflector 6 can be focussed (Figures

2 and 4) in manner known per se (DE-GM 88 10 381),
so that the diameter of the light concentration area
can be varied in a simple manner. If the light rays
of the light source 5 are focussed very intensively
5 by the reflector 6, then the light concentration region
has a relatively small diameter. However, for this
the light intensity is relatively high. If, on the
contrary, the rays emitted by the light source 5 are
focussed less intensively by the reflector 6, the size
10 of the light concentration area increases, whereas
the light intensity in this area decreases.

The reflector 6 can also be designed to be exchange-
able, as described for example in US-PS 4 514 794,
so that different reflectors 6 can be located in the
15 surface light, depending on the photographic conditions.
The size and intensity of the light concentration area
may also be adapted simply to the photographic conditions
in this way.

The reflector 6 can also be located outside the
20 main reflector 1. In particular, in this case, the
reflector 6 can be exchanged easily, if necessary.

In addition, it is also possible to vary the current
supplied to the light source 5, due to which a different
light intensity can likewise be achieved. Thus, due
25 to a suitable displacement and/or selection of the
reflector 6 and/or due to a variation of the energy
supplied, the light intensity and the size of the light
concentration area can be adapted in an optimum manner
to the respective photographic conditions.

30 As the drawings show, the counter-reflectors 4
are located between the associated light sources 3
and the diffuser 2. On the other hand, the reflector

6 is located in the region between the light source 5 and the rear wall 8. Also, by varying the opening angle of this reflector 6, as is described for example in DE-GM 88 10 381, the region of increased light concentration can be varied.

The surface light may also comprise more than only one additional light source 5, in order to achieve an increased light concentration and/or a larger region of increased light concentration. These various light sources 5 may be arranged so that their light rays strike the diffuser 2 in a common region. However, equally, it is also possible to create different regions of increased light concentration on the diffuser 2, in that the light rays emitted by the light sources 5 strike different regions of the diffuser 2. In this case, with the surface light, different objects can be illuminated simultaneously so that the desired, intensive false flash occurs respectively thereon. Advantageously, the various additional light sources 5 can be switched on individually, so that the surface light can be used for different photographic situations.

The additional light source(s) is/are advantageously able to be switched on independently of the remaining light sources 3, so that with the surface light, optionally a uniform light distribution as well as a non-uniform light distribution can be produced.

Claims

1. Light for photographic exposures, with a main reflector, which has a light outlet opening, which is closed by a diffuser, which is struck by light rays from light sources located in the housing, characterised in that a part of the diffuser (2) is illuminated by at least one additional light source (5), whereof the light rays, in addition to the light rays of at least one of the other light sources (3), strike the diffuser (2).
2. Light according to Claim 1, characterised in that a reflector (6) is associated with the additional light source (5).
3. Light according to Claim 2, characterised in that the reflector (6) can be focussed.
4. Light according to Claim 2 or 3, characterised in that the reflector (6) can be exchanged.
5. Reflector according to one of Claims 2 to 4, characterised in that the reflector (6) is located inside the main reflector (1).
6. Light according to one of Claims 2 to 4, characterised in that the reflector (6) is provided outside the main reflector (1).
7. Light according to one of Claims 1 to 6, characterised in that the additional light source (5) and the other light sources (3) can be switched on separately from each other.

8. Light according to one of Claims 2 to 7, characterised in that the reflector (6) is located on the side of the additional light source (5) remote from the diffuser (2).
- 5 9. Light according to one of Claims 1 to 8, characterised in that the additional light source (5) is located centrally on the wall (8) of the light located opposite the diffuser (2).
- 10 10. A light substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.